

Cover Crops in Vineyards

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Most of California's vineyardists are using cover crops as part of their farming system. Cover crops have an array of benefits: reduced soil erosion if the vineyard is on a hillside, addition or conservation of nitrogen, addition of organic matter to the soil, improved soil structure, increased water infiltration, and enhanced aesthetics. Cover crops may contribute to insect and mite pest control, depending upon the pests present and the conditions.

There are some drawbacks of cover crops: the cover crop itself consumes water, in a weak vineyard the cover crop will compete with the vines for nutrients and moisture, there is an increased frost hazard if not managed properly, we often observe more vertebrate pests, and you may need additional equipment.

Vineyards that are disced often utilize annual cover crops that produce a large amount of biomass each fall or spring that can be incorporated into the soil. These crops are often planted in the fall and are tilled under in the spring in preparation for frost season. The addition of this organic matter can improve soil structure and nutrient cycling. This is sometimes referred to as a green manure crop. Legumes blends with bell beans, vetch and peas are popular and will add nitrogen in weak vineyards where more vigor is desired. Grass mixes contain barley, oats or rye have been used to improve water infiltration. There are also blends of both legumes and grasses. Inexpensive blends of barley+vetch or oats+vetch are popular.

No-till vineyards utilize covers that become permanent sods. They provide support for equipment and can greatly increase water infiltration rates. A popular system is to sow winter annual plants in the fall and let them re-seed and die back in the spring. They are not irrigated at all during the year. The vines are irrigated via drip lines hung under the vine itself which conserves water. Species used for this system include annual clovers, bur medic, bromegrass and fescues.

Perennial species and legumes are also popular for no-till systems and some growers are even experimenting with California native grasses for this use. Species being tried are California brome, blue wild rye, meadow barley, and California barley. The drawback for natives is the seed is relatively expensive. Some other perennial species used are birdsfoot trefoil, perennial rye and tall fescue. Annual and perennial clovers can be used but are not popular because they encourage gophers.

In any system, the cover crop must be mowed down very low prior to the grape shoots emerging in March to reduce the chance of frost damage. Vineyards with tall cover crops will be colder than adjacent vineyards with the cover mowed. Mow early enough for the residue to decompose. The warmest condition is completely bare, firm soil that has been wetted. The moisture in the soil stores and re-radiates the solar energy – warming the vineyard. The soil directly under the vines is kept weed-free year-round. This same principle is utilized by orchardists.

Cooperative Extension has a variety of publications on cover crops in vineyards and orchards as well as frost control. They can be obtained from our office at the corner of Wardrobe and Grogan near the Merced Airport. The office is open M-F 8:00 to noon and 1:00 to 5:00. The above article drew from information provided by Sacramento County Farm Advisor Chuck Ingels who is a Merced County native.